

BE-149

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A micropump with a pump membrane which can be moved by modifying the volume of a pump chamber which is adjacent to the pump membrane and a base part, also comprising two valves which are arranged in recesses in the base part and react to the pressure in the pump chamber in order to alternately open and close an inlet channel and an outlet channel for a medium to be pumped, wherein the valves are formed without any common components by standalone functioning valve modules comprising a valve seat and a valve body, wherein the valve modules (40, 41) are comprised of a seat component (12) forming the valve seat and a spring component (13) forming the valve body., and wherein the seat component has a recess formed by a rim heightening (21) of a floor plate (20), wherein the rim heightening (21) projects from the floor plate (20) in the through-flow direction of the valve, wherein the rim heightening (21) is integrally connected with the floor plate (20), and

wherein the spring component (13) placed in the recess and located adjacent the rim heightening (21) is centered by the rim heightening (21), ~~and~~ wherein the spring component (13) is connected with an annular rim portion to the floor plate (20), and wherein a side of the spring component (13) facing away from the floor plate (20) is entirely free.

2. (Previously Presented) The micropump according to claim 1, wherein both valve modules are identically constructed.

3. (Previously Presented) The micropump according to claim 1, wherein hollows which are open toward the pump chamber are formed as recesses.

4. (Previously Presented) The micropump according to claim 3, wherein the height of the valve module is equal to the depth of the hollow receiving the module.

5. (Previously Presented) The micropump according to claim 1, wherein the valve module is comprised of two parts with a rotationally symmetrical seat component, and a valve body for closing and opening of a preferably central opening in the seat

component, wherein the valve body is comprised of a spring component.

6. (Previously Presented) The micropump according to claim 5, wherein the spring component exhibits a film in which a lip element is formed through at least one cutout and attached at one end or at several ends with the remaining film.

7. (Previously Presented) The micropump according to claim 6, wherein the cutout is a slot cutout following the contour of the lip element.

8. (Previously Presented) The micropump according to claim 6, wherein the spring component is connected with the seat component in an outer ring area which is centered by the seat component, from which the lip element extends inwards.

9. (Previously Presented) The micropump according to claim 5, wherein the seat component exhibits a ring heightening in the area of the valve seat which extends from a floor plate and which prestresses the lip element in the resting state.

10. (Previously Presented) The micropump according to claim 9, wherein the seat component has an elevated rim seat by means which the lip element is lifted across its entire length from the floor plate.

11. (Previously Presented) The micropump according to claim 8, wherein the lip element is connected with the ring area at two diametrical places or connected with the ring area at three places which are evenly distributed across the ring area.

12. (Previously Presented) The micropump according to claim 1, wherein it is composed of a base module which receives the valve modules and comprises a base part and hose connections, and of an actuator module which includes the membrane and a piezo disk connected to the membrane.

13. (Previously Presented) The micropump according to claim 12, wherein the base module, with exception of the recesses, and/or the actuator module is rotationally symmetrical.

14. (Currently amended) The micropump according to claim 1, wherein the base part is disk-shaped and the base part has a disk

plane place and that the inlet and outlet channel extend perpendicularly relative to the disk plane.

15. (Previously Presented) The micropump according to claim 13, wherein a seat for the actuator module is formed on the base part, and the pump membrane rests over a support ring on a ring shoulder located on the base part.

16. (Previously Presented) The micropump according to claim 13, wherein the base module is formed in one piece with the hose connections.

17. (Previously Presented) The micropump according to claim 1, wherein at least the part of the pump which comes into contact with the medium is made of a plastic.

18. (Previously Presented) The micropump according to claim 1, wherein the membrane is made of one piece or exhibits several layers of different material.

19. (Previously Presented) The micropump according to claim 1, wherein the membrane exhibits a recess facing the pump

chamber, which preferably corresponds to the maximum pump chamber volume.

20. (Previously Presented) The micropump according to claim 1, wherein the membrane is cap-like and can be moved manually or the help of an actuation which is temporarily or permanently attached to the membrane.

21. (Previously Presented) A method for the serial production of micropumps according to claim 1, wherein the valve modules, base modules, which include the base part and connections, as well as the actuator modules which include the membrane, are prefabricated independently of one another and wherein the micropump is made up of these modules.